



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2016-5872; Directorate Identifier 2016-NE-11-AD; Amendment 39-18681; AD 2016-20-15**

**RIN 2120-AA64**

**Airworthiness Directives; General Electric Company Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for all General Electric Company (GE) GEnx-1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P2, -1B70/75/P2, and -1B74/75/P2 turbofan engines with engine assembly, part number (P/N) 2447M10G01 or P/N 2447M10G02, installed. This AD was prompted by a report of a significant fan rub event. This AD requires rework of the engine fan stator module assembly. We are issuing this AD to prevent failure of the fan blades and the load reduction device, loss of power to one or more engines, loss of thrust control, and loss of the airplane.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com). You may view this

referenced service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-5872.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-5872; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Christopher McGuire, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7120; fax: 781-238-7199; email: [chris.mcguire@faa.gov](mailto:chris.mcguire@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all GE GENx-1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P2, -1B70/75/P2, and -1B74/75/P2 turbofan engines with engine assembly, P/N 2447M10G01 or P/N 2447M10G02, installed. The NPRM published in the Federal Register on May 10, 2016 (81 FR 28777). The NPRM was prompted by a report of a significant fan rub event. The NPRM proposed to require rework of the engine fan stator module assembly. We are issuing this AD to prevent failure of the fan blades and the load

reduction device, loss of power to one or more engines, loss of thrust control, and loss of the airplane.

#### **Request to Add Terminating Action**

Japan Airlines and United Airlines requested that the airplane flight manual (AFM) limitations mandated by AD 2016-08-12, Amendment 39-18488 (81 FR 23581, April 22, 2016) (“AD 2016-08-12”), be removed from an aircraft that has complied with the fan case grind procedure mandated in this AD. They reason that once the fan case grind is completed on both engines installed on an airplane, there is no longer an unsafe condition.

We agree. Once the fan case grind has been completed on both engines installed on an airplane, the unsafe condition no longer exists. With agreement from the Transport Airplane Directorate (TAD), we added a terminating action paragraph to this AD.

#### **Request to Add Compliance Methods**

Japan Airlines requested that alternate service documents be approved as compliance to AD 2016-06-08, Amendment 39-18439 (81 FR 14704, March 18, 2016) (“AD 2016-06-08”). They reason that the service documents provide the same procedure and the same post-rework configuration.

We disagree. AD 2016-06-08 is a separate AD issued by the TAD, which includes aircraft-level corrective actions. The commenter must contact the TAD to request a change to AD 2016-06-08. We did not change this AD.

#### **Request to Change Applicability**

GE requested that the applicability explicitly state that engine assembly, P/N 2447M10G03, is not applicable to this AD. They reason that engine assembly, P/N 2447M10G03, is a new production part that does not contain the unsafe condition.

We disagree. Since engine assembly, P/N 2447M10G03, is not listed in the applicability of this AD, it is not applicable to this AD. We did not change this AD.

**Request to Change Compliance Method**

GE requested that another procedure included within a new service bulletin, GE GENx-1B Service Bulletin (SB) 72-0317 R00, dated June 29, 2016, be added as a means of compliance to this AD. They reason that this new procedure achieves the same configuration as the proposed procedure.

We agree. The new procedure in GE GENx-1B SB 72-0317 R00, dated June 29, 2016, also corrects the unsafe condition addressed in this AD. We added GE GENx-1B SB 72-0317 R00, dated June 29, 2016, as a means of compliance in this AD.

**Request to Change Compliance Time**

GE requested that we move the action specified in paragraph (f) Credit for Previous Action, to compliance paragraph (e) of this AD. They reason that this action is an equivalent method of performing the fan case rework.

We agree. The action is equivalent to the current compliance, but located within a different service document. We revised paragraph (f) and paragraph (e) of this AD accordingly.

**Request to Change Affected ADs**

United Airlines requested that we list AD 2016-06-08 and AD 2016-08-12 in this AD. They reason that AD 2016-06-08 and AD 2016-08-12 address the same unsafe condition as this AD and also mandate a fan case rework.

We agree. AD 2016-06-08 and AD 2016-08-12 address the same unsafe condition as this AD. We list AD 2016-06-08 and AD 2016-08-12 in paragraph (h) of this AD.

**Request to Change Affected ADs**

United Airlines requested that we supersede AD 2016-08-12 with this AD. They reason that AD 2016-06-08 and AD 2016-08-12 address the same unsafe condition of the engine and mandate a fan case rework procedure.

We disagree. An AD that mandates engine-level corrective actions, “this AD”, cannot supersede an AD, “AD 2016-08-12” that mandates aircraft-level corrective actions. AD 2016-08-12 mandates aircraft limitations in addition to the engine rework procedure that can only be mandated at the aircraft level, not the engine level. We did not change this AD.

#### **Request to Change Operating Procedures**

United Airlines requested that we revise the operating procedures that require the ice removal procedure to be done every 5 minutes, rather than the preferred every 5 minutes or less, allowing the pilot to do the procedure prior to 5 minutes after Engine Indication and Crew Alerting System (EICAS) notification. United Airlines suggests the 5 minute requirement does not allow pilots to effectively manage the cockpit within reasonable parameters or room to operate.

We disagree. The AFM operating procedures are mandated by aircraft-level AD 2016-06-08 and AD 2016-08-12, which were issued by the TAD. The commenter must contact the TAD to request a change to AD 2016-06-08 or AD 2016-08-12. We did not change this AD.

#### **Request to Change Compliance Time**

United Airlines requested that we allow installation of engine assembly, P/N 2477M10G03, by using GE GENx-1B SB 72-0317 to modify the engine instead of using the fan grind rework procedure as compliance to AD 2016-08-12. They reason that the procedure in GE GENx-1B SB 72-0317 achieves the same engine outcome as the currently mandated compliance.

We disagree. AD 2016-08-12 was issued by the TAD. The commenter must contact the TAD to request a change to AD 2016-08-12. We did not change this AD.

## **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## **Related Service Information under 1 CFR part 51**

We reviewed GE GENx-1B SB 72-0314 R00, dated April 1, 2016. The SB describes procedures for increasing the clearance of the fan stator module assembly. We also reviewed GE GENx-1B SB 72-0309 R00, dated March 11, 2016. That SB describes procedures for increasing the clearance of the fan stator module assembly. We also reviewed GE GENx-1B SB 72-0317 R00, dated June 29, 2016. That SB releases a new fan stator module assembly. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Costs of Compliance**

We estimate that this AD affects 89 engines installed on airplanes of U.S. registry. We also estimate that it will take about 40 hours per engine to comply with this AD. The average labor rate is \$85 per hour. Based on these figures, we estimate the total cost of this AD to U.S. operators to be \$302,600.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2016-20-15 **General Electric Company**: Amendment 39-18681; Docket No.

FAA-2016-5872; Directorate Identifier 2016-NE-11-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all General Electric Company (GE) GEnx-1B64/P2, -1B67/P2, -1B70/P2, -1B70C/P2, -1B70/75/P2, and -1B74/75/P2 turbofan engines with engine assembly, part number (P/N) 2447M10G01 or P/N 2447M10G02, installed.

#### **(d) Unsafe Condition**

This AD was prompted by a report of a significant fan rub event. We are issuing this AD to prevent failure of the fan blades and the load reduction device, loss of power to one or more engines, loss of thrust control, and loss of the airplane.



**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) Modify the fan stator module assembly, with one of the following methods, before December 31, 2016.

(i) Use paragraphs 3.B.(1) through 3.B.(6) or 3.C.(1) through 3.C.(6) of the Accomplishment Instructions of GE GENx-1B Service Bulletin (SB) 72-0314 R00, dated April 1, 2016, to do the modification.

(ii) Use paragraphs 3.B.(1) through 3.B.(6) or 3.C.(1) through 3.C.(6) of the Accomplishment Instructions of GE GENx-1B SB 72-0309 R00, dated March 11, 2016, to do the modification.

(iii) Use paragraph 3.A. of the Accomplishment Instructions of GE GENx-1B SB 72-0317 R00, dated June 29, 2016, to do the modification.

(2) Reserved.

**(f) Terminating Action**

Compliance with this AD constitutes terminating action for AD 2016-06-08, Amendment 39-18439 (81 FR 14704, March 18, 2016) (“AD 2016-06-08”) and AD 2016-08-12, Amendment 39-18488 (81 FR 23581, April 22, 2016) (“AD 2016-08-12”), provided that all of the airplanes within the operator’s fleet that have engines identified in paragraph (c) of this AD are modified as specified in paragraph (e) of this AD. After fleet incorporation of this AD, do not install any engine listed in paragraph (c) of this AD unless the engine is modified as specified in paragraph (e) of this AD, or AD 2016-06-08, or AD 2016-08-12.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

**(h) Related Information**

(1) For more information about this AD, contact Christopher McGuire, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7120; fax: 781-238-7199; email: [chris.mcguire@faa.gov](mailto:chris.mcguire@faa.gov).

(2) AD 2016-06-08 and AD 2016-08-12 pertain to the subject of this AD.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) General Electric Company (GE) GENx-1B Service Bulletin (SB) 72-0309 R00, dated March 11, 2016.

(ii) GE GENx-1B SB 72-0314 R00, dated April 1, 2016.

(iii) GE GENx-1B SB 72-0317 R00, dated June 29, 2016.

(3) For GE service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com).

(4) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on September 30, 2016.

Colleen M. D'Alessandro,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

[FR Doc. 2016-24795 Filed: 10/13/2016 8:45 am; Publication Date: 10/14/2016]